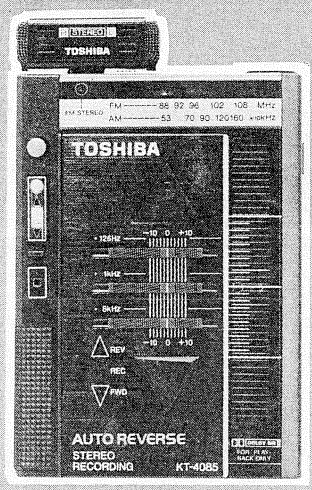
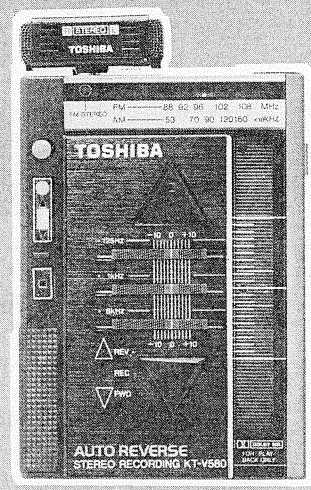
SERVICE DATA
FILE NO. 100-214

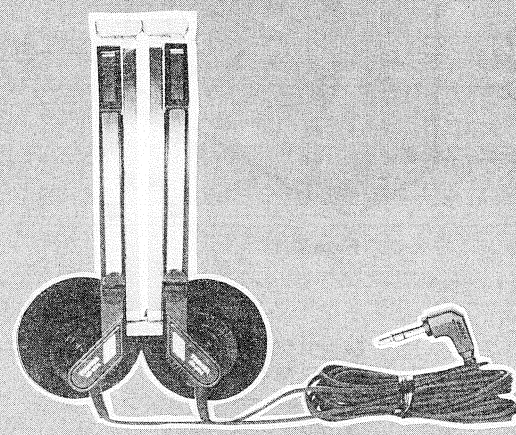
TOSHIBA

STEREO RADIO CASSETTE RECORDER

KT-4085, V580







SPECIFICATIONS

Receivable frequency:	FM: 88 MHz to 108 MHz AM: 526.5 kHz to 1606.5 kHz
Antennas:	FM: Headphones cord AM: Ferrite-core antenna
Track system:	4-track, 2-channel stereo
Recording system:	AC bias
Erasure system:	Magnetic erasure
Recommended tapes:	Normal (ferric), chrome and metal: C-30 to C-90
Tape speed:	4.8 cm/sec
Frequency response:	Playback: Normal 40 Hz – 14 kHz CrO_2/metal 40 Hz – 16 kHz Recording: Normal 60 Hz – 8 kHz
Graphic equalizer:	125 Hz, 1 kHz, 8 kHz ± 10 dB
Input terminals:	Microphone jack [MIC]: 3.5-mm dia, stereo x 1, low impedance (200 ohms to 2 kohms) Input level approx. 0.5 mV
Output terminals:	Headphones jack [PHONE]: 3.5-mm dia . stereo x 1, impedance 32 ohms
Maximum output power:	60 mW (30 mW + 30 mW)
Power supply:	3 V DC (IEC R6; size-AA battery x 2) External power source supplied to the [DC IN 3V] jack (negative polarity to 3.4-mm dia. center contact)
Dimensions:	82 (W) x 115 (H) x 32.5 (D) mm
Weight:	260 g (without batteries)

Specifications are subject to change without notice.

4085-TA, TC, TE, AY, V580-VF
PRINTED IN JAPAN 22905420 May, 1985 Ⓢ

1. OPERATING CONTROLS

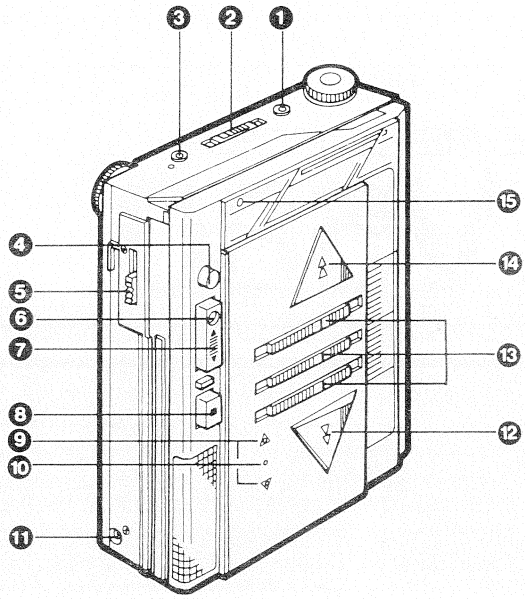


Figure 1

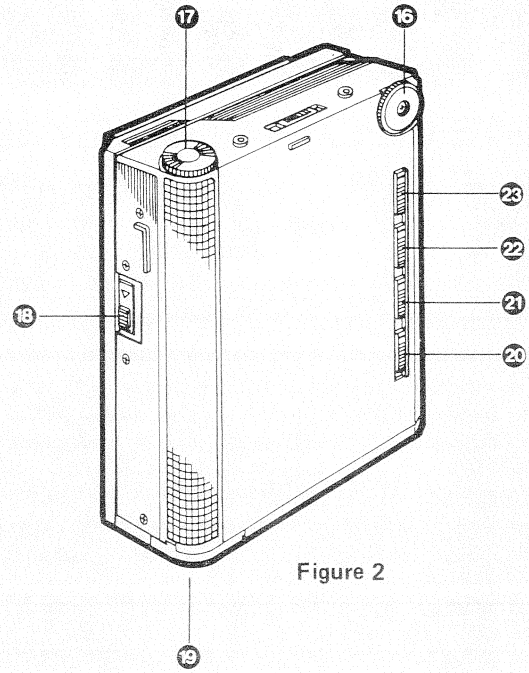


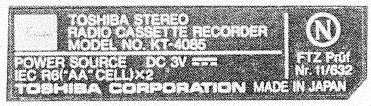
Figure 2

❶ [PHONES] jack
❷ [BAND] selector
❸ [MIC] jack
❹ [MANUAL] button
❺ [REVERSE MODE] switch
❻ [●REC] button
❼ [◂▸PLAY] button
❽ [■STOP] button
❾ [▽ FWD, △ REV] indicators
❿ [REC] indicator
⓫ [DC IN 3V] jack
⓬ ▸▸ button
⓭ Graphic equalizer controls
⓮ ◂◂ button
⓯ [FM-STEREO] indicator
⓰ [VOLUME] control
⓱ [TUNING] knob
⓲ Open knob
⓳ Battery compartment
⓴ [❚❚PAUSE] switch
㉑ [FUNCTION] selector
㉒ [DOLBY* NR/BEAT] switch
㉓ [TAPE] selector

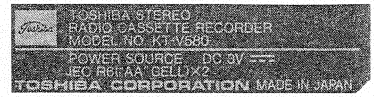
Note: Release the cassette housing lid by sliding the Open Knob. Open the lid fully with your hand before inserting or removing a cassette.

* Noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

Name Label Model KT-4085



Name Label Model KT-V580



CAUTION: Before returning the unit to the customer, check that the resistance between both blades of AC plug and any accessible metal parts is more than 3MΩ after completion of servicing, using the circuit tester. (TA Model only)

2. DISASSEMBLY INSTRUCTIONS

FRONT CABINET REMOVAL

1. Remove two screws Ⓐ and Ⓑ, and the front cabinet will be removed. (Figures 3 and 4)

Figure 3

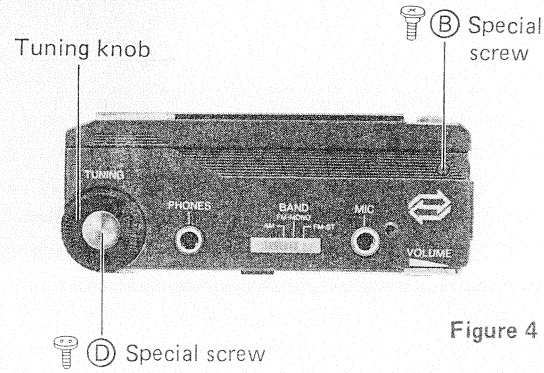


Figure 4

MECHANISM ASSEMBLY REMOVAL

1. Remove front cabinet .
2. Open battery lid and remove the battery lid by pushing hook section of ⊕ contact with a screw driver. (Figure 5)
3. Remove two screws Ⓒ fixing open knob, and metal fitting, and the knob will be removed. (Figure 6)
   Note: A spring is provided between the metal fitting and the volume. Be careful not to miss the spring when removing the metal fitting.
4. Remove one screw Ⓓ fixing tuning knob and one screw Ⓔ fixing volume knob, and the two knobs will be removed. (Figures 4 and 7)
5. Remove two screws Ⓕ. (Figure 6)
6. Remove two nuts Ⓖ, and the mechanism assembly will be removed from the unit. (Figure 8)

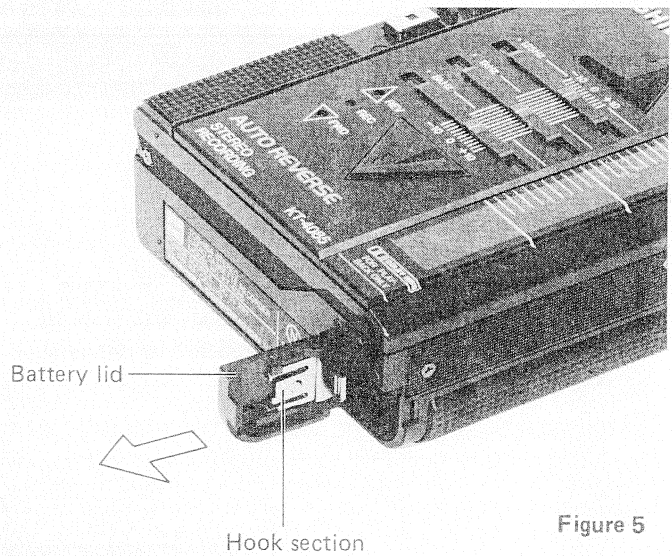


Figure 5

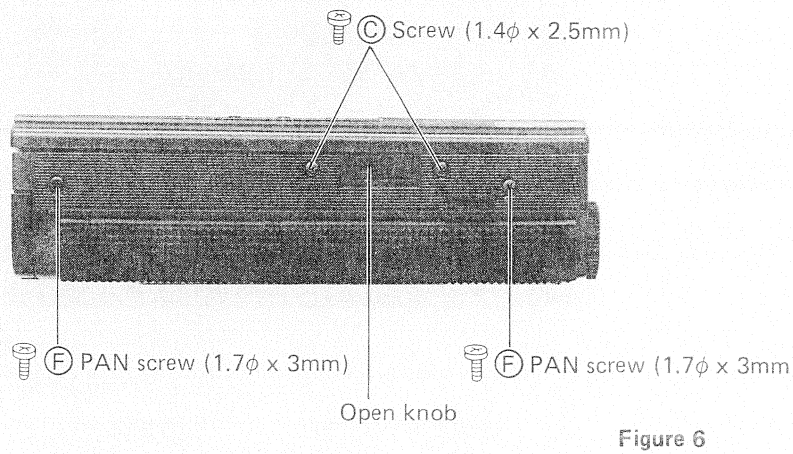


Figure 6

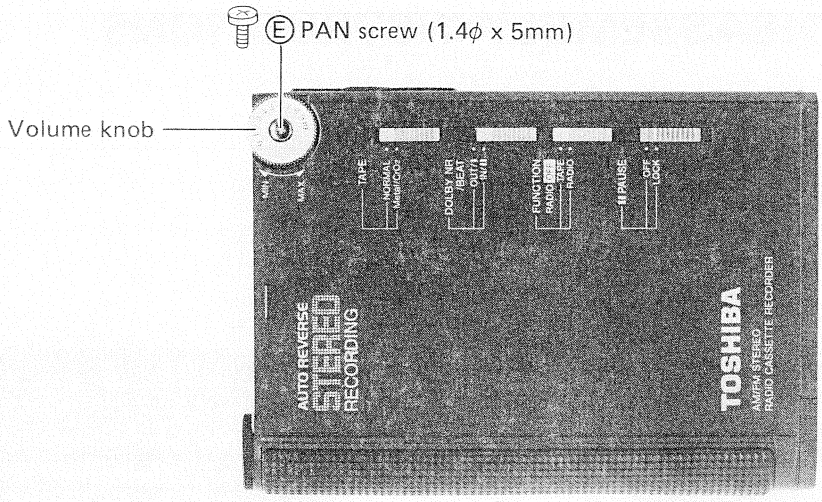


Figure 7

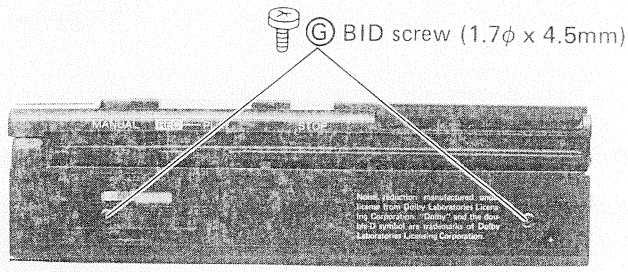


Figure 8

MAIN P.C. BOARD REMOVAL

1. Remove front cabinet.
2. Remove mechanism assembly.
3. Remove four screws Ⓗ and one nut Ⓘ. (Figure 9)
4. Unsolder six leads Ⓙ to Ⓞ and one battery spring ⊕ side Ⓟ, and the Main P.C. Board will be removed. (Figure 9)

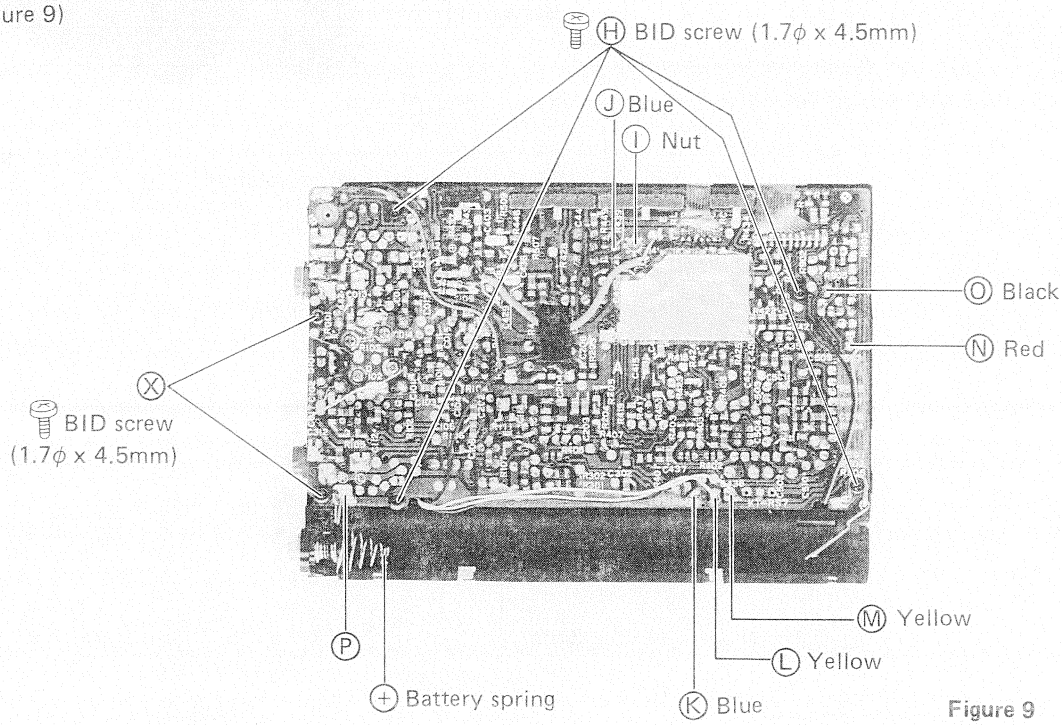


Figure 9

[Note on removal of P.C. Board]
When opening Main P.C. Board as illustrated, do not apply excessive force to flexible P.C. Board. (Figure 10)

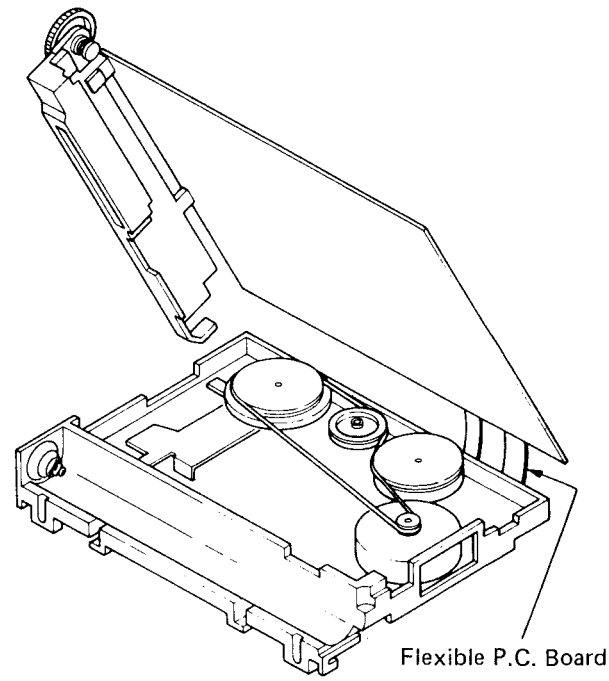


Figure 10

TUNER FRAME REMOVAL

1. Remove front cabinet.
2. Remove mechanism assembly.
3. Remove Main P.C. Board.
4. Remove two screws Ⓧ , and the tuner frame will be removed. (Figure 9)

   Note: When removing tuner frame, first remove the screw securing the dial drum and put the drum on the hook Ⓨ as illustrated in Figures 11 and 12, and the tuner frame will be removed without removing dial cord.

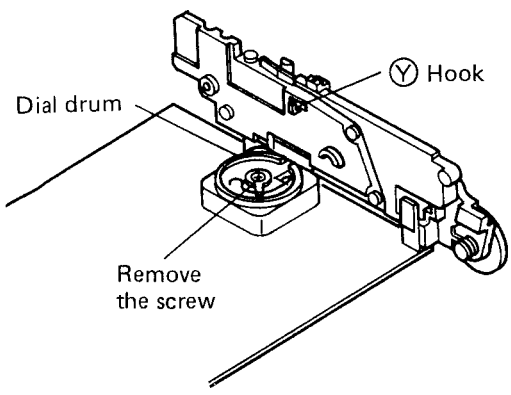


Figure 11

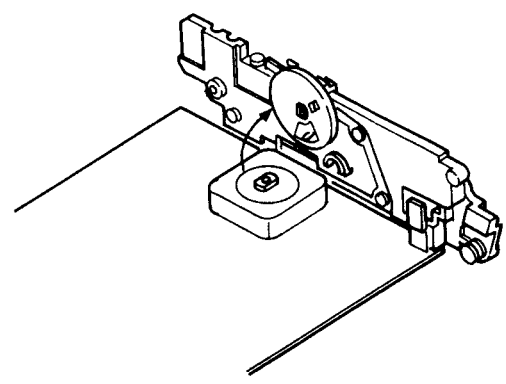
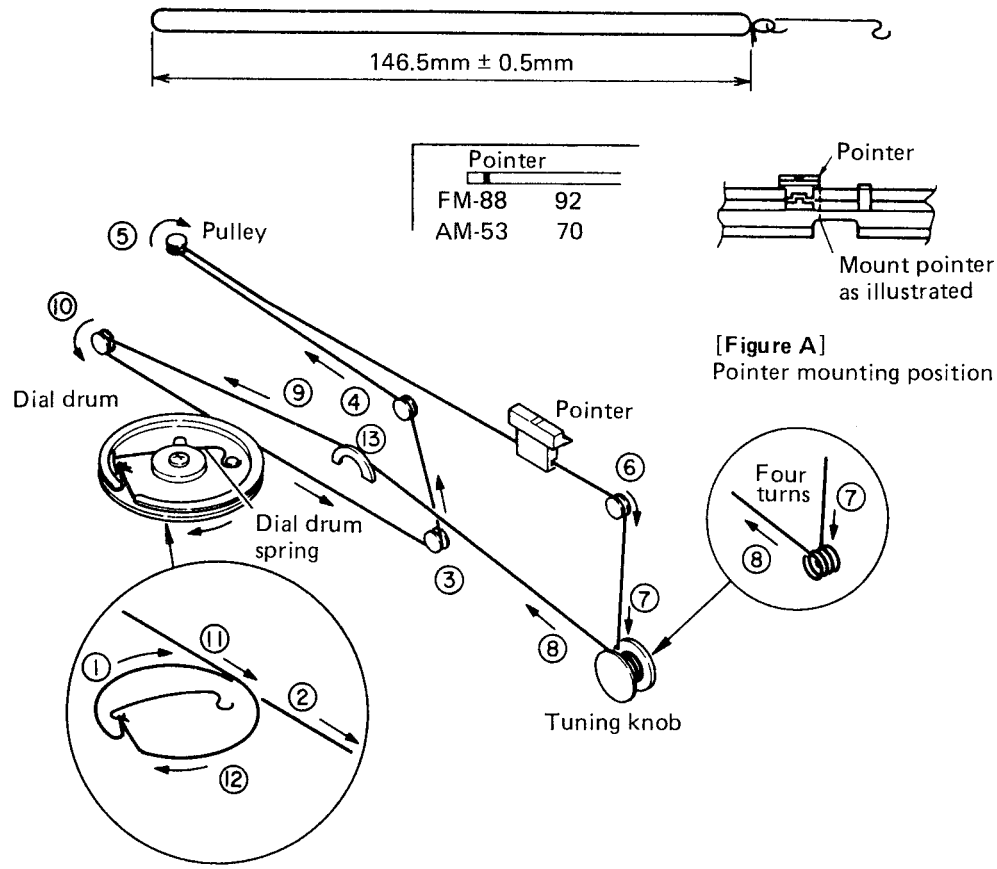


Figure 12

3. DIAL CORD RESTRINGING

1. Turn dial drum clockwise. (to the lower frequency direction)
2. Proceed stringing in steps ① to ⑬.
   (Be sure to hook the cord to ⑬ at last)
3. Check that dial cord is hooked to five pulleys securely.
4. Turn tuning knob counterclockwise fully.
5. Mount pointer on pointer mounting position as shown in Figure A .



[Figure A]
Pointer mounting position

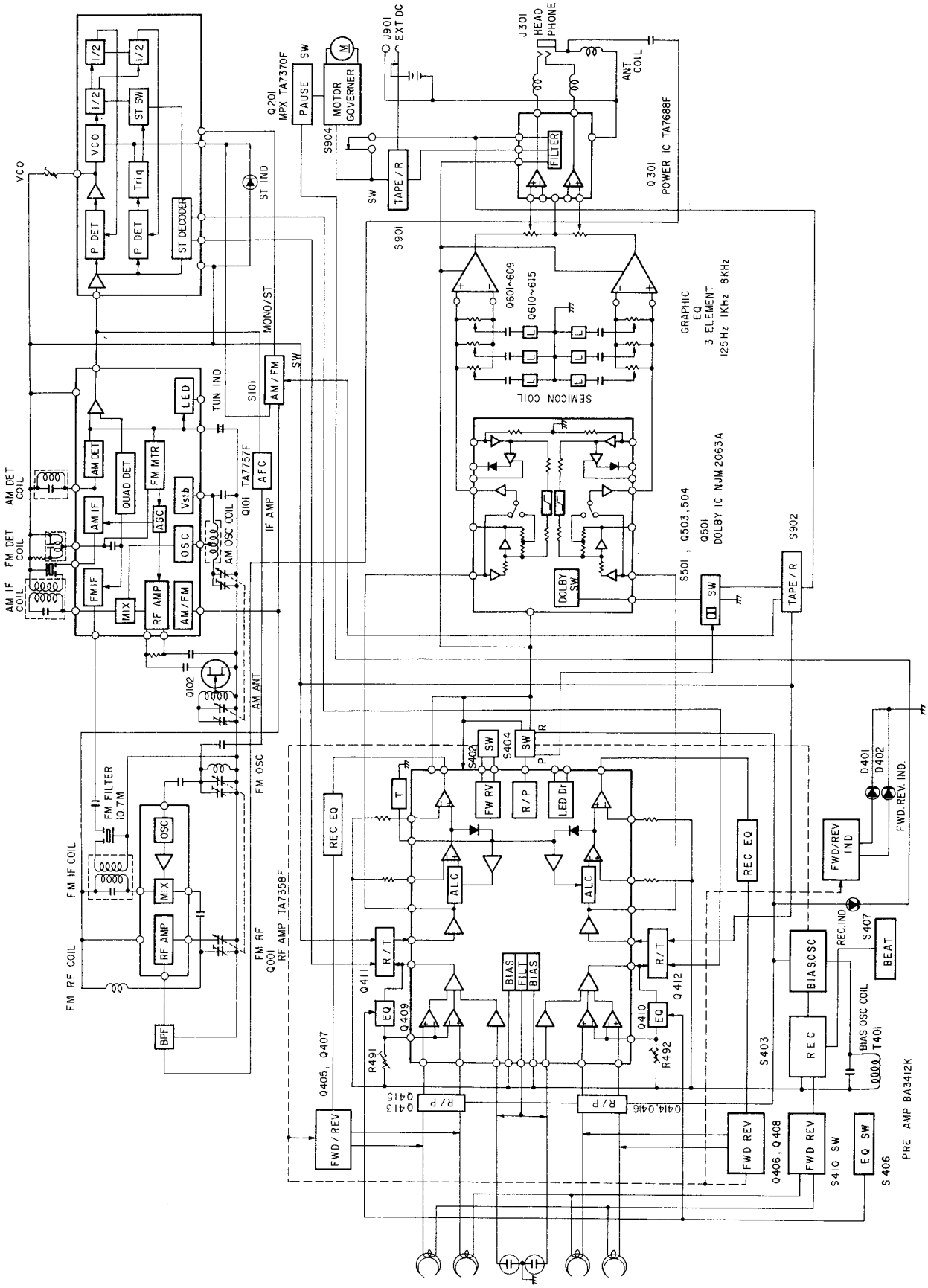
CURRENT CONSUMED

TAPE	Play (C-60 rewinding position center)	
	└→[VOL MIN]	118mA
	Rec ——————→	139mA
FM	MONO	57mA (VOL MIN)
	STEREO	59mA (VOL MIN)
AM		45mA (VOL MIN)

TORQUE

PLAY, REC	35g · cm
FF	60g · cm
REW	60g · cm

4. BLOCK DIAGRAM



5. ADJUSTMENTS

TEST EQUIPMENTS

1. AM Signal Generator with frequency range of at least from 450 kHz to 13 MHz.
2. FM Signal Generator with 10.7 MHz marker signal.
3. AM Sweep Generator of 455 kHz center frequency.
4. FM Sweep Generator with a wide band amplifier of approximate 500 kHz, with 10.7 MHz marker signal.
5. Oscilloscope with a wide band amplifier of approximate 100 kHz.
6. Loop Antenna. (MW)
7. Test loop – a three turn loop antenna of 10 cm diameter. (FM-IF)
8. Test loop – a coil of any size wire with one turn or more. (AM-IF)
9. VTVM.
10. 75 ohm dummy antenna. (FM)
11. Adjustment Screwdriver.

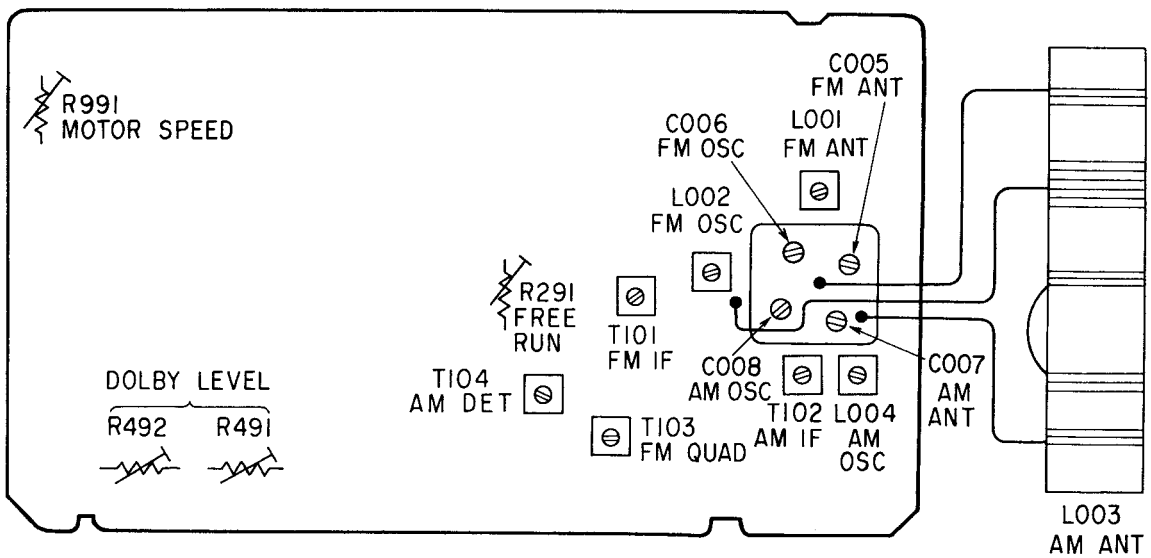


Figure 13

MW ALIGNMENT

1. Turn on the AM signal generator, sweep generator and the VTVM allowing a fifteen-minute warm-up period.
2. First, do the AM-IF Alignment (MW ALIGNMENT CHART-Step 1), refering to Figure 14.
3. Using the test loop across the output of the signal generator, inductively connect the signal generator to the radio. (Figure 15)
4. Connect the VTVM across the Headphone Jack.
5. Set signal generator frequency as listed in ALIGNMENT CHART and maintain a sufficient output level to provide an indication on VTVM.
6. Set volume control at mid-position.

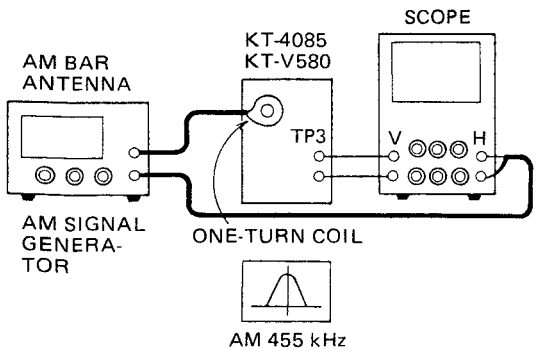


Figure 14

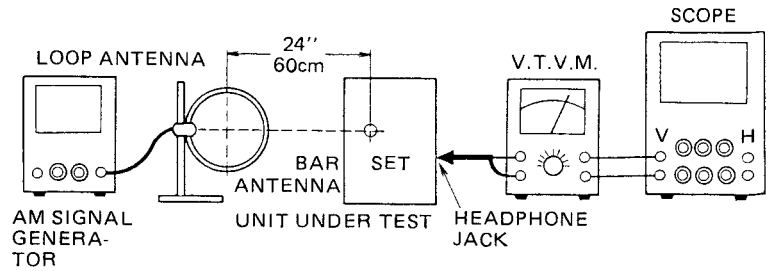


Figure 15

MW ALIGNMENT CHART

Band	Step	Generator Frequency	Radio Dial Setting	Adjustment	Scope of VTVM
AM-IF	1	455 kHz	Approximate 100 kHz	T102, T104	Adjust coil T102 and T104 until best signal peak is obtained.
MW	2	515 kHz	Tuning Knob Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L004	Adjust for maximum indication.
	3	1650 kHz	Tuning Knob Fully Clockwise (Highest Frequency)	OSC. Trim C008	Adjust for maximum indication.
	4	Repeat steps 2 and 3 as required.			
	5	600 kHz	Tune to Signal.	Ant. Coil L003 (MW)	Adjust for maximum indication.
	6	1400 kHz	Tune to Signal.	Ant. Trim. C007	Adjust for maximum indication.
	7	Repeat steps 5 and 6 as required.			

FM-IF ALIGNMENT

1. Set the select switch to FM position.
2. Turn on both sweep generator and oscilloscope, and allow a fifteen-minute warm-up period.
3. Connect the RF SWEEP SIGNAL OUTPUT of the sweep generator through the loop antenna to the receiver. (Figure 16)
4. Connect the oscilloscope Vertical input directly to the test point TP3 and connect the shielded lead to the test point TP-2.
5. Connect the SWEEP VOLTAGE OUTPUT of the sweep generator to the oscilloscope Horizontal input.
6. Proceed as outlined in the FM-IF ALIGNMENT CHART.

FM-IF ALIGNMENT CHART

Step	Signal coupling	Equip.	Tuning	Connection	Adjust. point	Pattern
1	Connect sweep generator output to a three-turn loop antenna of 1 cm diameter.	Sweep generator of 10.7 MHz center freq. with 10.7 MHz marker.	Tuning Knob fully counter-clockwise (Lowest Frequency.)	Set scope for connecting output signal from TP3 to vertical axis of scope "V" and sweep generator output to horizontal axis "H".	T101 T103	Turn the coil T103 to obtain S curve. (Figure 17) Adjust coil T101 in order until the best S curve is obtained. (Figure 18) Repeat as required.

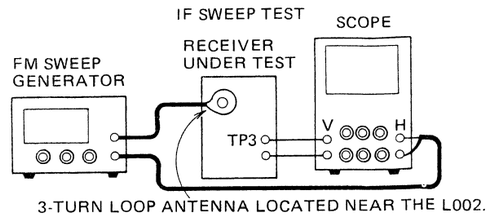


Figure 16

Figure 17

Figure 18

FM-RF ALIGNMENT

1. Turn on the signal generator and the VTVM, and allow a fifteen-minute warm-up period.
2. Connect the signal generator output through a 75 ohm dummy antenna across FM antenna. (Figure 19)
3. Connect the VTVM across the Headphone Jack.
4. Set the volume control to mid-position.
5. Adjust the signal generator frequency as indicated in FM-RF ALIGNMENT CHART, and maintain a sufficient signal output level to provide a measurable indication.
6. Proceed as outlined in the FM-RF ALIGNMENT CHART.

FM-RF ALIGNMENT CHART

Step	Signal Generator	Radio Dial Setting	Adjustment	Remarks
1	87.3 MHz	Tuning Knob Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L002	Adjust for maximum output indication.
2	108.5 MHz	Tuning Knob Fully Clockwise (Highest Frequency)	OSC. Trim. C006	Adjust for maximum output indication.
3	Repeat steps 1 and 2 as required.			
4	90 MHz	Tune to signal	Ant. Coil L001	Adjust for maximum output indication.
5	106 MHz		Ant. Trim. C005	
6	Repeat steps 4 and 5 as required.			

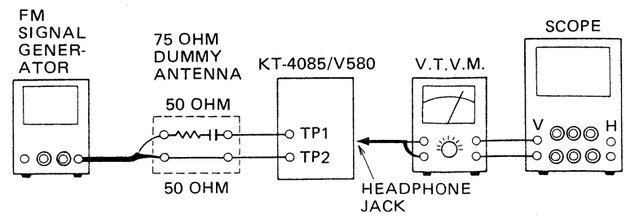


Figure 19

PLAYBACK HEAD ADJUSTMENT

A 6.3 kHz standard tape must be used for this adjustment. Connect a VTVM or an oscilloscope to the Headphone jack and adjust the azimuth by using a phillips screwdriver to maintain the maximum output voltage. (Figure 20)

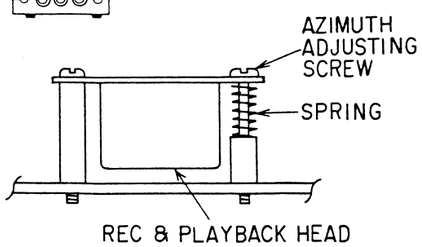


Figure 20

6. ELECTRICAL PARTS LOCATIONS

Q404

	FWD	REV
E	0V	0V
C	0V	0V
B	0V	0.6V

Q405, 406

	PLAY		REC	
	FWD	REV	FWD	REV
S	1.4V	1.4V	18.0V	1.3V
D	0.9V	0.9V	1.3V	1.3V
G	0V	0.1V	0V	0.6V

Q407, 408

	PLAY		REC	
	FWD	REV	FWD	REV
S	1.4V	1.4V	1.3V	18.0V
D	0.8V	0.8V	1.3V	1.3V
G	0.1V	0V	0.6V	0V

Q417

	PLAY		REC	
	FWD	REV	FWD	REV
E	0V	0V	0V	0V
C	0V	0V	2.3V	0V
B	0.6V	0.6V	0V	0V

Q418

	PLAY		REC	
	FWD	REV	FWD	REV
E	0V	0V	0V	0V
C	0V	0V	0V	2.3V
B	0.6V	0.6V	0V	0V

Q419

	PLAY		REC	
	FWD	REV	FWD	REV
S	1.4V	1.4V	1.3V	18.0V
D	1.4V	1.4V	1.3V	1.3V
G	1.0V	1.0V	−2.8V	0V

Q420

	PLAY		REC	
	FWD	REV	FWD	REV
S	1.4V	1.4V	1.3V	1.3V
D	1.4V	1.4V	18.0V	1.3V
G	1.0V	1.0V	0V	−2.4V

Q401

	PLAY		REC			PLAY		REC	
	FWD	REV	FWD	REV		FWD	REV	FWD	REV
1	1.4V	1.4V	0.9V	1.4V	17	1.2V	1.2V	1.3V	1.3V
2	1.3V	1.3V	1.1V	1.1V	18	0V	0V	0.1V	0.1V
3	1.4V	1.4V	1.3V	1.3V	19	1.0V	1.0V	1.3V	1.3V
4	1.1V	1.1V	1.1V	1.1V	20	1.3V	1.3V	1.3V	1.3V
5	1.3V	1.3V	1.3V	1.3V	21	1.1V	1.1V	1.1V	1.1V
6	1.0V	1.0V	1.3V	1.3V	22	1.4V	1.4V	1.3V	1.3V
7	1.2V	1.2V	0.9V	0.9V	23	1.3V	1.3V	1.2V	1.2V
8	1.2V	1.2V	1.3V	1.3V	24	1.4V	1.4V	0.8V	1.2V
9	1.0V	1.0V	1.3V	1.3V	25	1.3V	1.3V	1.1V	0.8V
10	0V	0V	0V	0V	26	1.2V	1.2V	1.1V	1.1V
11	0V	0V	1.5V	1.5V	27	1.3V	1.3V	1.3V	1.3V
12	2.5V	2.5V	2.5V	2.5V	28	2.4V	2.4V	2.4V	2.4V
13	0.8V	0.8V	0.8V	0.8V	29	1.3V	1.3V	1.3V	1.3V
14	0.6V	0.6V	0.6V	0.6V	30	1.2V	1.2V	1.2V	1.2V
15	1.0V	1.0V	1.3V	1.3V	31	1.3V	1.3V	1.4V	0.9V
16	0V	0V	0V	0V	32	0V	0V	0V	0V

Q901

	PLAY PAUSE	
	OFF	LOCK
1	0V	
2	1.3V	
3	0.2V	
4	3.0V	
5	0V	
6	0.7V	0V
7	2.3V	2.5V
8	1.7V	0V

Q402

	PLAY	REC
E	0V	0.1V
C	0V	2.4V
B	0V	0.7V

Q413, 416

	PLAY		REC	
	FWD	REV	FWD	REV
S	1.4V	1.4V	1.3V	18.0V
D	1.4V	1.4V	1.0V	1.5V
G	0.9V	0.9V	0V	0V

Q414, 415

	PLAY		REC	
	FWD	REV	FWD	REV
S	1.4V	1.4V	18.0V	1.3V
D	1.4V	1.4V	1.1V	1.0V
G	0.9V	0.9V	0V	0V

Q411, 412

	TAPE	RADIO
S	0.7V	0.5V
D	0.7V	0.7V
G	1.2V	0V

Q409, 410

	NORMAL	METAL
S	0.7V	0.7V
D	0.7V	0.7V
G	0V	1.2V

Q501

	DOLBY	
	OUT	IN
1	0.8V	0.2V
2	1.2V	
3	1.2V	
4	1.2V	
5	1.2V	
6	1.1V	
7	1.2V	
8	0V	
9	1.2V	
10	1.2V	
11	1.1V	
12	1.2V	
13	1.2V	
14	1.2V	
15	1.2V	
16	2.5V	

Q301

1	1.6V	9	3.0V
2	1.6V	10	1.6V
3	1.6V	11	2.5V
4	1.6V	12	2.2V
5	0V	13	3.0V
6	2.4V	14	1.6V
7	1.6V	15	1.6V
8	0V	16	1.6V

Q302

E	3.0V
C	2.5V
B	2.2V

Q202

	AM	FM-MO	FM-ST
E	2.5V	2.8V	2.8V
C	2.8V	2.8V	2.0V
B	2.2V	2.2V	2.4V

Q201

	AM	FM-MO	FM-ST
1	2.9V	2.8V	2.8V
2	0V	0V	0V
3	2.5V	2.4V	2.4V
4	0V	0V	0V
5	0V	0V	0V
6	0V	0V	0V
7	1.3V	1.8V	1.8V
8	2.8V	2.8V	2.0V
9	0.8V	0.8V	0.8V
10	0V	0V	0V
11	0.8V	0.8V	0.8V
12	0V	0V	0V
13	0V	0V	0V
14	0.1V	0.1V	0.1V
15	0V	0V	0V
16	2.2V	2.1V	2.1V

Q101

	AM	FM-MO	FM-ST
1	0.9V	0.1V	0.1V
2	0.9V	0.1V	0.1V
3	0.6V	2.8V	2.5V
4	1.3V	1.3V	1.3V
5	1.3V	1.3V	1.3V
6	0.5V	0.8V	0.8V
7	0.6V	0V	0V
8	0V	0V	0V
9	1.2V	1.0V	1.0V
10	2.8V	2.7V	2.7V
11	2.8V	2.7V	2.7V
12	2.8V	2.7V	2.6V
13	1.0V	1.1V	1.1V
14	1.1V	1.2V	1.2V
15	1.3V	1.1V	1.1V
16	2.8V	2.7V	2.7V

Q612~615

E	1.2V
C	2.3V
B	1.8V

Q601

E	2.3V
C	1.7V
B	1.7V

Q602, 603

E	2.3V
C	1.4V
B	1.7V

Q604, 605

E	1.4V
C	0.6V
B	0.9V

Q606, 607

E	1.4V
C	0 V
B	0.9V

Q608, 609

E	0 V
C	0.8V
B	0.6V

Q610, 611

E	1.2V
C	2.3V
B	1.8V

Q504

	TAPE DOLBY		RADIO
	OUT	IN	
E	0V	0V	0V
C	0V	0.6V	0V
B	0V	0V	0.6V

Q503

	TAPE DOLBY		RADIO
	OUT	IN	
E	0V	0V	0V
C	0.8V	0V	0.8V
B	0V	0.6V	0V

Q001

	AM	FM-MO	FM-ST
1	0V	0.76V	0.76V
2	0.1V	1.4V	1.5V
3	0.6V	2.7V	2.4V
4	0.1V	1.4V	1.4V
5	0V	0V	0V
6	0.6V	2.7V	2.4V
7	0.4V	2.5V	2.2V
8	0.6V	2.7V	2.4V

Q102

	AM	FM
S	0.2V	0.2V
D	2.7V	2.6V
G	0.2V	0.2V

Main P.C. Board

Motor

Play Leaf Switch

FF Leaf Switch

External DC Jack

FWD/REV Select Switch

Pause Switch

Tape/Radio Select Switch

Rec/Play Select Switch

Dolby NR Beat Switch

Tape Select Switch

Rec/Play Head

Head Flexible P.C. Board

Slide Volume Flexible P.C. Board

Graphic Equalizer P.C. Board

Graphic Equalizer Flexible P.C. Board

LED P.C. Board

Battery Spring

Volume

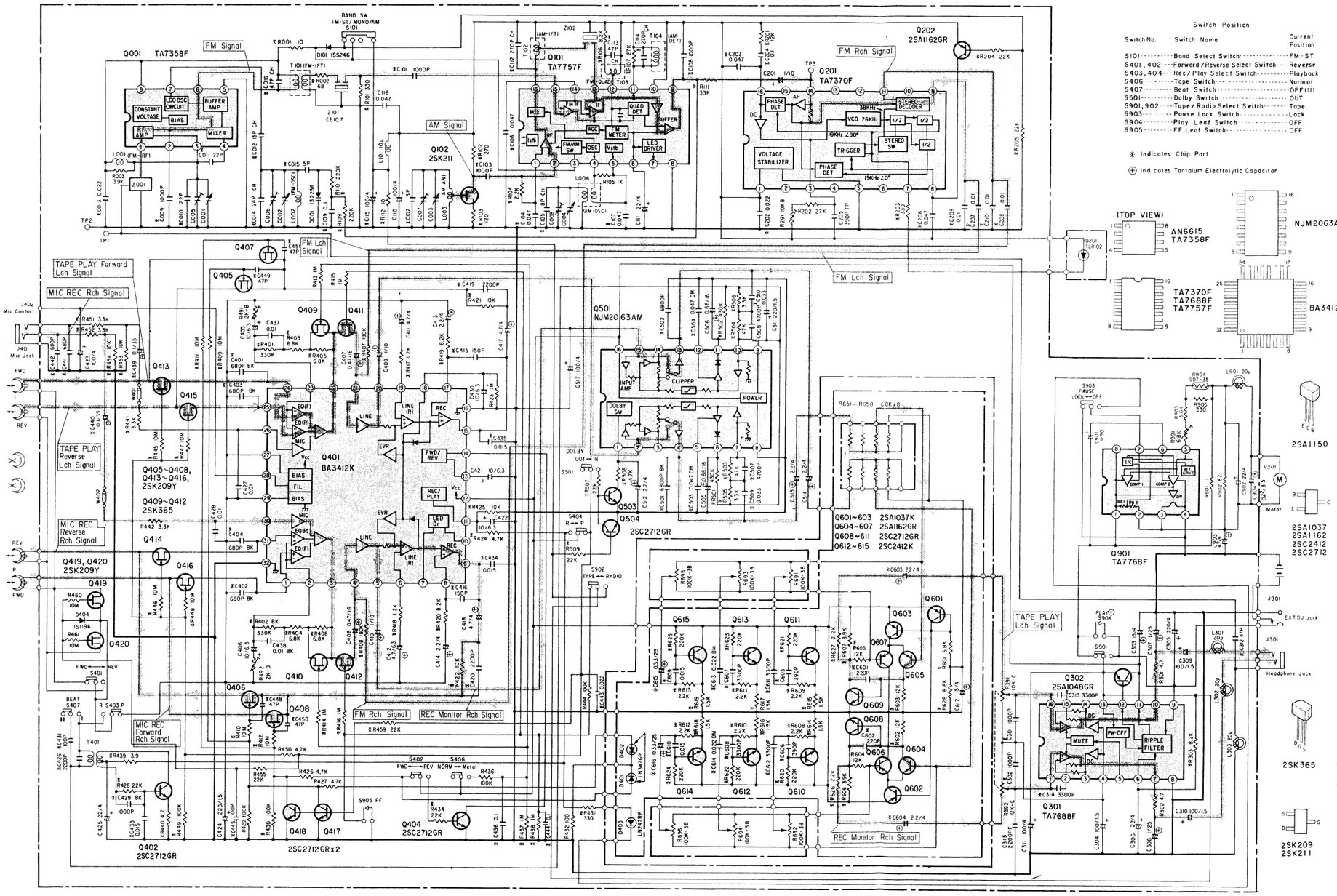
Mic Jack

FM-ST/MONO/AM Band Select Switch

Headphone Jack

L003 AM Antenna Coil

7. SCHEMATIC DIAGRAM



Switch Position

Switch No.	Switch Name	Current Position
S101	Band Select Switch	FM-ST
S401, 402	Forward/Reverse Select Switch	Reverse
S403, 404	Rec/Play Select Switch	Playback
S406	Tape Switch	Normal
S407	Beat Switch	OFF (II)
S501	Dolby Switch	OUT
S901, 902	Tape/Radio Select Switch	Tape
S903	Pause Lock Switch	Lock
S904	Play Leaf Switch	OFF
S905	FF Leaf Switch	OFF

✱ Indicates Chip Part

⊕ Indicates Tantalum Electrolytic Capacitor

Q001

	AM	FM-MO	FM-ST
1	0V	0.76V	0.76V
2	0.1V	1.4V	1.5V
3	0.6V	2.7V	2.4V
4	0.1V	1.4V	1.4V
5	0V	0V	0V
6	0.6V	2.7V	2.4V
7	0.6V	2.5V	2.2V
8	0.6V	2.7V	2.4V

Q101

	AM	FM-MO	FM-ST
1	0.5V	0.1V	0.1V
2	0.9V	0.1V	0.1V
3	0.6V	2.8V	2.5V
4	1.3V	1.3V	1.3V
5	1.3V	1.3V	1.3V
6	0.5V	0.8V	0.8V
7	0.6V	0V	0V
8	0V	0V	0V
9	1.2V	1.0V	1.0V
10	2.8V	2.7V	2.7V
11	2.8V	2.7V	2.7V
12	2.8V	2.7V	2.6V
13	1.0V	1.1V	1.1V
14	1.1V	1.2V	1.2V
15	1.3V	1.1V	1.1V
16	2.8V	2.7V	2.7V

Q102

	AM	FM
S	0.2V	0.2V
D	2.7V	2.6V
G	0.2V	0.2V

Q201

	AM	FM-MO	FM-ST
1	2.9V	2.8V	2.8V
2	0V	0V	0V
3	2.5V	2.4V	2.4V
4	0V	0V	0V
5	0V	0V	0V
6	0V	0V	0V
7	1.3V	1.8V	1.8V
8	2.8V	2.8V	2.0V
9	0.8V	0.8V	0.8V
10	0V	0V	0V
11	0.8V	0.8V	0.8V
12	0V	0V	0V
13	0V	0V	0V
14	0.1V	0.1V	0.1V
15	0V	0V	0V
16	2.2V	2.1V	2.1V

Q202

	AM	FM-MO	FM-ST
E	2.9V	2.8V	2.8V
C	2.8V	2.8V	2.0V
B	2.2V	2.2V	2.4V

Q301

1	1.6V	9	3.0V
2	1.6V	10	1.6V
3	1.6V	11	2.5V
4	1.6V	12	2.2V
5	0V	13	3.0V
6	2.4V	14	1.6V
7	1.6V	15	1.6V
8	0V	16	1.6V

Q302

E	3.0V
C	2.5V
B	2.2V

Q401

	PLAY FWD	PLAY REV	REC FWD	REC REV
1	1.4V	1.4V	0.9V	1.4V
2	1.3V	1.3V	1.1V	1.1V
3	1.4V	1.4V	1.3V	1.3V
4	1.1V	1.1V	1.1V	1.1V
5	1.3V	1.3V	1.3V	1.3V
6	1.0V	1.0V	1.3V	1.3V
7	1.2V	1.2V	0.9V	0.9V
8	1.2V	1.2V	1.3V	1.3V
9	1.0V	1.0V	1.3V	1.3V
10	0V	0V	0V	0V
11	0V	0V	1.5V	1.5V
12	2.5V	2.5V	2.5V	2.5V
13	0.8V	0.8V	0.8V	0.8V
14	0.6V	0.6V	0.6V	0.6V
15	1.0V	1.0V	1.3V	1.3V
16	0V	0V	0V	0V
17	1.2V	1.2V	1.3V	1.3V
18	0V	0V	0.1V	0.1V
19	1.0V	1.0V	1.3V	1.3V
20	1.3V	1.3V	1.3V	1.3V
21	1.1V	1.1V	1.1V	1.1V
22	1.4V	1.4V	1.3V	1.3V
23	1.3V	1.3V	1.2V	1.2V
24	1.4V	1.4V	0.8V	1.2V
25	1.3V	1.3V	1.1V	0.8V
26	1.2V	1.2V	1.1V	1.1V
27	1.3V	1.3V	1.3V	1.3V
28	2.4V	2.4V	2.4V	2.4V
29	1.3V	1.3V	1.3V	1.3V
30	1.2V	1.2V	1.2V	1.2V
31	1.3V	1.3V	1.4V	0.9V
32	0V	0V	0V	0V

Q402

	PLAY	REC
E	0V	0.1V
C	0V	2.4V
B	0V	0.7V

Q404

	FWD	REV
E	0V	0V
C	0V	0V
B	0V	0.6V

Q405, 406

	PLAY FWD	PLAY REV	REC FWD	REC REV
S	1.4V	1.4V	18.0V	1.3V
D	0.9V	0.9V	1.3V	1.3V
G	0V	0.1V	0V	0.6V

Q407, 408

	PLAY FWD	PLAY REV	REC FWD	REC REV
S	1.4V	1.4V	1.3V	18.0V
D	0.8V	0.8V	1.3V	1.3V
G	0.1V	0V	0.6V	0V

Q409, 410

	NORMAL	METAL
S	0.7V	0.7V
D	0.7V	0.7V
G	0V	1.2V

Q411, 412

	TAPE	RADIO
S	0.7V	0.5V
D	0.7V	0.7V
G	1.2V	0V

Q413, 416

	PLAY FWD	PLAY REV	REC FWD	REC REV
S	1.4V	1.4V	1.3V	18.0V
D	1.4V	1.4V	0V	1.5V
G	0.9V	0.9V	0V	0V

Q414, 415

	PLAY FWD	PLAY REV	REC FWD	REC REV
S	1.4V	1.4V	18.0V	1.3V
D	1.4V	1.4V	1.1V	1.0V
G	0.9V	0.9V	0V	0V

Q417

	PLAY FWD	PLAY REV	REC FWD	REC REV
E	0V	0V	0V	0V
C	0V	0V	2.5V	0V
B	0.6V	0.6V	0V	0V

Q418

	PLAY FWD	PLAY REV	REC FWD	REC REV
E	0V	0V	0V	0V
C	0V	0V	0V	2.3V
B	0.6V	0.6V	0V	0V

Q419

	PLAY FWD	PLAY REV	REC FWD	REC REV
S	1.4V	1.4V	1.3V	18.0V
D	1.4V	1.4V	1.3V	1.3V
G	1.0V	1.0V	−2.8V	0V

Q420

	PLAY FWD	PLAY REV	REC FWD	REC REV
S	1.4V	1.4V	1.3V	1.3V
D	1.4V	1.4V	18.0V	1.3V
G	1.0V	1.0V	0V	−2.4V

Q501

	DOLBY OUT	DOLBY IN
1	0.8V	0.2V
2	1.2V	
3	1.2V	
4	1.2V	
5	1.2V	
6	1.1V	
7	1.2V	
8	0V	
9	1.2V	
10	1.2V	
11	1.1V	
12	1.2V	
13	1.2V	
14	1.2V	
15	1.2V	
16	2.5V	

Q503

	TAPE DOLBY OUT	TAPE DOLBY IN	RADIO
E	0V	0V	0V
C	0.8V	0V	0.8V
B	0V	0.6V	0V

Q504

	TAPE DOLBY OUT	TAPE DOLBY IN	RADIO
E	0V	0V	0V
C	0V	0.6V	0V
B	0V	0V	0.6V

Q601

E	2.3V
C	1.7V
B	1.7V

Q602, 603

E	1.4V
C	4V
B	1.7V

Q604, 605

E	4V
C	0.6V
B	0.9V

Q606, 607

E	1.4V
C	0V
B	0.9V

Q608, 609

E	0V
C	0.8V
B	0.5V

Q610, 611

E	1.2V
C	2.3V
B	1.8V

Q612~615

E	1.2V
C	2.3V
B	1.8V

Q901

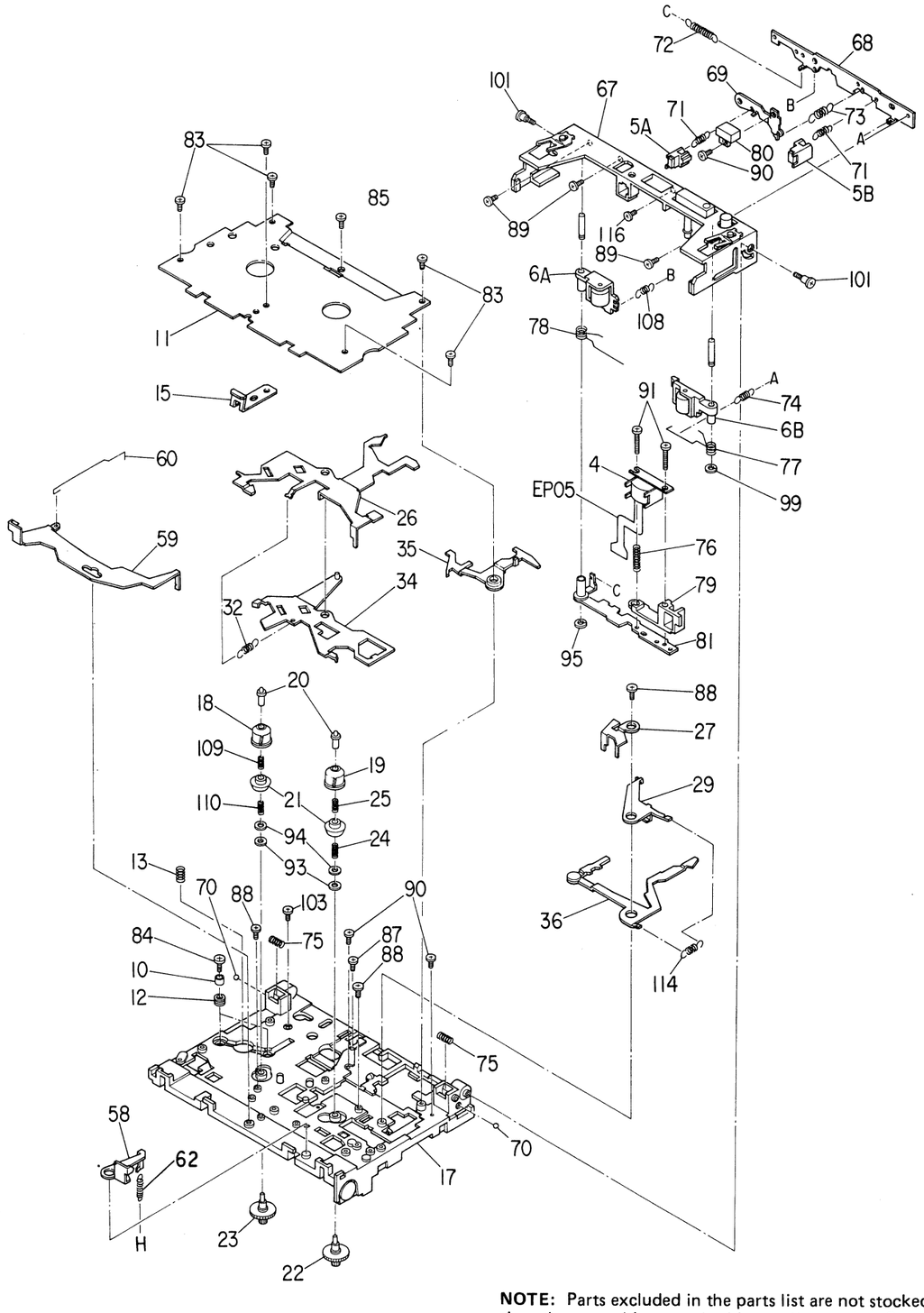
	PLAY PAUSE OFF	PLAY PAUSE LOCK
1	0V	
2	1.3V	
3	0.2V	
4	3.0V	
5	0V	
6	0.7V	0V
7	2.3V	2.5V
8	1.7V	0V

Q902

	PLAY PAUSE OFF	PLAY PAUSE LOCK
E	3.0V	3.0V
C	1.7V	0V
B	2.3V	2.5V

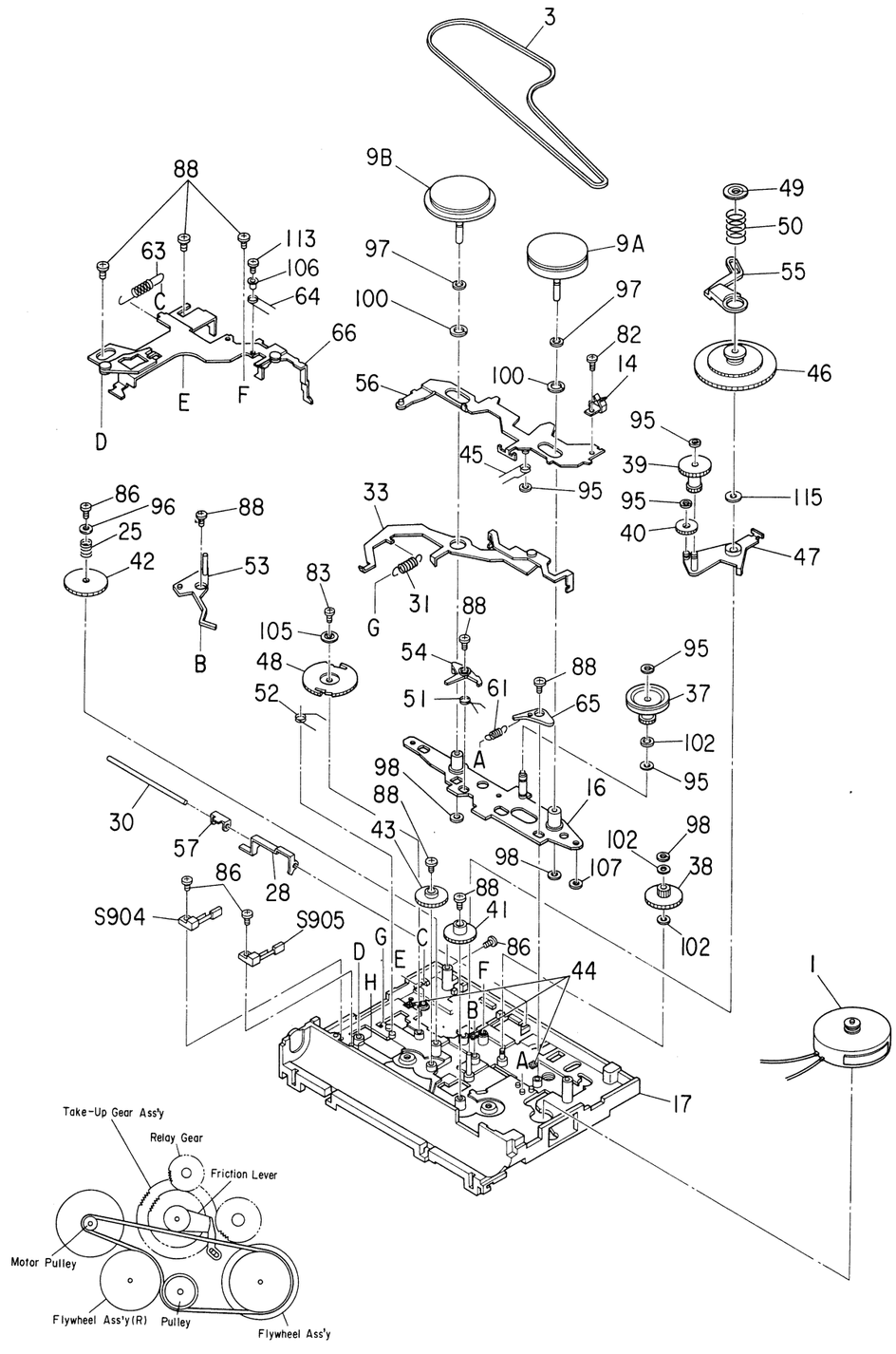
CAUTION:
The ⚠ mark, the symbol No. circled with oval in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

8-1. EXPLODED VIEW MECHANISM (UPPER)



NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

8-2. EXPLODED VIEW MECHANISM (LOWER)



NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

8-3. MECHANISM PARTS LIST

Symbol No.	Part No.	Description
1	22125362	Motor
3	25759026	Belt
4	22217468	Record/Playback Head, HRPT-468
5A	22218282	Erase Head Ass'y, R
5B	22218284	Erase Head Ass'y, L
6A	25797053	Pressure Roller Ass'y, R
6B	25797052	Pressure Roller Ass'y, L
9A	25797049	Flywheel Ass'y, R
9B	25797050	Flywheel Ass'y, L
10	25726714	Spacer, Motor, B
11	25734525	Mecha Cover
12	25761492	Cushion, Motor
13	25777447	Spring, Earth
14	25779508	Spring, Reverse Switch
15	25779509	Spring, Holder
16	25791840	Sub Chassis Ass'y
17	25791947	Main Chassis Ass'y
18	25754486	Top Reel, R
19	25754487	Top Reel, L
20	25754489	Cap, Reel
21	25754495	Collar, Reel
22	25756438	Gear, Reel, L
23	25756439	Gear, Reel, R
24	25777445	Spring, Reel
25	25777446	Spring, Reel Cap
26	25747252	Lever, Lock
27	25747219	Fast Switch Lever
28	25747222	Lever, Play
29	25747255	Lever, Manual Lock
30	25775279	Pin, Play Lever
31	25776720	Spring
32	25776833	Spring
33	25791839	Switch Lever Ass'y
34	25791841	Cue Lever Ass'y
35	25791849	Manual Lever Ass'y
36	25791850	Limit Lever Ass'y
37	25756436	Pulley, Guide
38	25756437	Gear, Relay
39	25756440	Gear, Play, A
40	25756441	Gear, Play, B
41	25756443	Gear, Relay, R
42	25756444	Gear, REW
43	25756455	Gear, Relay, L
44	25853027	Sheet
45	25778228	Spring, REW Lever
46	25791828	Rewind Gear Ass'y
47	25791842	Rewind Lever Ass'y
48	25756445	Gear, Reverse
49	25766179	Spring Frict
50	25777360	Spirng
51	25778224	Spring
52	25778258	Spring, Reverse Gear
53	25784227	Lever, ASO
54	25784228	Lever, Gear, Lock

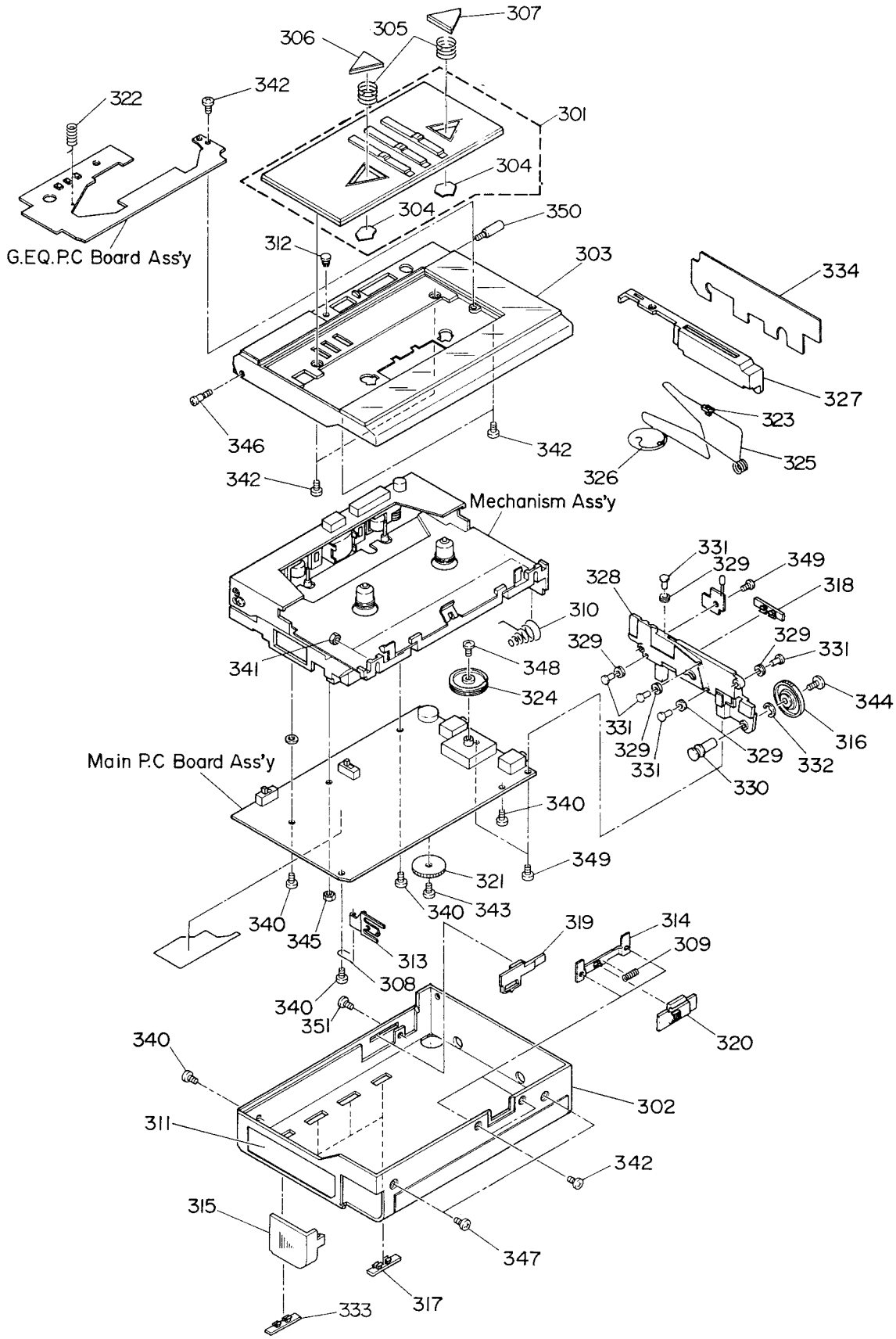
Symbol No.	Part No.	Description
55	25784230	Lever, Friction
56	25791848	Reverse Slider Ass'y
57	25747229	Lever, REC
58	25747232	Lever, REC Stop, L
59	25747233	Lever, REC Stop, R
60	25775292	REC Wire
61	25776831	Spring
62	25776832	Spring
63	25776834	Spring
64	25778227	Spring, REC Switch
65	25784229	Lever, REC Bias
66	25791838	REC Slider Ass'y
67	25791948	Cassette Holder Ass'y
68	25734524	Cassette Holder Plate
69	25747224	Lever, Stop
70	25757129	Steel Ball
71	25776808	Spring
72	25776810	Spring
73	25776835	Spring
74	25776836	Spring
75	25777403	Spring, Click
76	25777433	Spring, Azimuth
77	25778225	Spring, Pressure, L
78	25778226	Spring, Pressure, R
79	25783394	Erase Head Base
80	25784233	Button, Stop
81	25791830	Head Lever Ass'y
82	22707830	Screw, 1.7ϕ x 1.6mm, PAN
83	22708440	Screw, 1.7ϕ x 3.5mm, FLT
84	22707970	Screw, 1.7ϕ x 3mm, PAN
85	22708250	Screw, 1.7ϕ x 3.5mm, FLT
86	22708375	Screw, 1.7ϕ x 4mm, PAN
87	22708403	Screw, 1.7ϕ x 3mm, PAN
88	22708367	Screw, 1.7ϕ x 3.5mm, PAN
89	22707615	Screw, 1.7ϕ x 3mm, PAN
90	22707862	Screw, 1.7ϕ x 2mm, PAN
91	22708366	Screw, 2ϕ x 12mm, PAN
93	25764510	Washer, 2.5ϕ
94	25766265	Washer, 1.5ϕ
95	25766050	Washer, 4ϕ
96	25766250	Washer, 1.7ϕ
97	25766226	Washer, 2.1ϕ
98	25766227	Washer, 1.5ϕ
99	25766229	Washer, 1.5ϕ
100	25766228	Washer, 4.2ϕ
101	22708267	Screw, Special, 1.7ϕ
102	25766099	Washer, 2.1ϕ
103	22707670	Screw, 1.7ϕ x 4mm, PAN
105	25724991	Boss, Reverse Gear
106	25726768	Spacer
107	25735277	Spring Washer
108	25776850	Spring
109	25777471	Spring, Reel Cap, R
110	25777472	Spring, Reel, R
113	22707832	Screw, 1.4ϕ x 2.5mm, PAN

9-1. CABINET PARTS LIST

Symbol No.	Part No.	Description
114	25776873	Spring
115	25766258	Washer, 1.5ϕ
116	22708310	Screw, 1.7ϕ x 3.5mm, PAN

Symbol No.	Part No.	Description
301	25885206	Front Deco Plate Ass'y (TA, TC, TE, AY)
301	25885207	Front Deco Plate Ass'y (VF)
302	25883969	Back Cabinet Ass'y
303	25883973	Sub Cassette Cover Ass'y
304	22766126	Sheet, Button
305	25777452	Spring, Button
306	25886513	Button, A
307	25886514	Button, B
308	22725276	Battery Contact, A
309	25777490	Spring, Lock
310	25111042	Battery Spring Kit
311	25809174	Name Label (TA, TE, AY)
311	25809176	Name Label (VF)
312	22753299	Azimuth Cover
313	25847317	Battery Plate, B
314	25848089	Lock Plate
315	25884185	Battery Cover
316	25886508	Knob, Tuning
317	25886509	Knob, Slide Switch, A
318	25886510	Knob, Slide, Switch, B
319	25886511	Knob, Reverse
320	25886512	Knob, Lock
321	25886615	Knob, Volume
322	25777463	Spring, Earth
323	22741482	Pointer
324	22742333	Dial Drum
325	22999327	Dial Cord
326	25776767	Spring, Drum
327	25872116	Frame Cover
328	22714392	Tuner Frame
329	22742347	Pully
330	22743361	Tuning Shaft
331	22743362	Pully Shaft
332	22703279	E Ring, 3ϕ
333	25886645	Knob, Slide Switch
334	22766150	Mic Cushion
340	22707638	Screw, 1.7ϕ x 4.5mm, BID
341	22707827	Nut, 1.7ϕ
342	22708252	Screw, 1.7ϕ x 3mm, PAN
343	22708314	Screw, 1.4ϕ x 5mm, PAN
344	22708400	Decoration Screw
345	22708401	Nut, 1.4ϕ
346	22708402	Screw, Special, 1.7ϕ
347	22708403	Screw, 1.7ϕ x 3mm, PAN
348	22707725	Screw, 1.7ϕ x 2.5mm, PAN
349	22707765	Screw, 1.7ϕ x 4mm, PAN
350	22708429	Screw, Special, 1.7ϕ
351	22707751	Screw, 1.7ϕ x 6mm, PAN

9-2. EXPLODED VIEW CABINET



NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

10. PARTS LIST

Symbol No.	Part No.	Description
TRANSISTORS, IC'S & DIODES		
Q001	B0325505	IC, TA7358F
Q101	B0358075	IC, TA7757F
Q102	A6043530	Transistor, 2SK211-Y
Q201	B0325625	IC, TA7370F
Q202	A6541140	Transistor, 2SA1162-GR
Q301	B0356892	IC, TA7688F
Q302	A6534440	Transistor, 2SA1048-GR
Q401	22117548	IC, BA3412K
Q402, 404	A6335480	Transistor, 2SC2712-GR
Q405, 406, 407, 408	A6043330	Transistor, 2SK209-Y
Q409, 410, 411, 412	A6058710	Transistor, 2SK365-Y
Q413, 414, 415, 416	A6043330	Transistor, 2SK209-Y
Q417, 418	A6335480	Transistor, 2SC2712-GR
Q419, 420	A6043330	Transistor, 2SK209-Y
Q501	22117422	IC, NJM2063AM
Q503, 504	A6335480	Transistor, 2SC2712-GR
Q601, 602, 603	22117583	Transistor, 2SA1037-K-T.L
Q604, 605, 606, 607	A6541140	Transistor, 2SA1162-GR
Q608, 609, 610, 611	A6335480	Transistor, 2SC2712-GR
Q612, 613, 614, 615	22117585	Transistor, 2SC2412-K-T.L
Q901	B0358180	IC, TA7768F
D001	A7289000	Diode, 1S2236
D101	A7153100	Diode, 1SS246
D201	A8600035	Diode, LED TLR102A
D401, 402	22119106	Diode, LN347GP
D403	22119107	Diode, LN247RP
D404	A7151250	Diode, 1SS196
L001	22294572	Coil, FM Antenna
L002	22295156	Coil, FM OSC
L003	22243048	Coil, AM Antenna
L004	22245455	Coil, AM OSC
L101	22291300	Choke Coil, 10μH
L301, 302, 303	22211327	Choke Coil, 20μH
L901	22211327	Choke Coil, 20μH

Symbol No.	Part No.	Description
T101	22265891	IF Transformer, FM
T102	22264896	IF Transformer, AM
T103	22267433	IF Transformer, FM
T104	22266395	IF Transformer, AM
T401	22235258	Coil, Bias OSC
ELECTRICAL PARTS		
S101	22196364	Switch, Slide, Band Select
S401, 402	22196288	Switch, Slide, FWD/REV Select
S403, 404	22196288	Switch Slide, REC/PLAY, Select
S406	22196596	Switch, Slide, Tape Select
S407, 501	22196595	Switch, Slide, Dolby Select
S901, 902	22196595	Switch, Slide
S903	22196596	Switch, Slide, Pause
S904	22196222	Switch, Leaf, Play
S905	22196222	Switch, Leaf, FF
J301	22198176	Jack, Headphone
J401	22198175	Jack, Microphone
J402	25847288	Mic Contact
J901	22198074	Jack DC Power
Z001	22153266	FM Band Pass Filter, BPMB8
Z101	22153361	Ceramic Filter, 10.7MS2W
Z102	22153214	Ceramic Filter (TA, TC, VF)
Z102	22153295	Ceramic Filter (TE, AY)
EP01	22130790	G.EQ. P.C. Board Ass'y
EP02	22130784	Main P.C. Board Ass'y (TA, TC, VF)
EP02	22130785	Main P.C. Board Ass'y (TE, AY)
EP03	22192641	P.C. Board (G.EQ.)
EP04	22192645	P.C. Board (Slide Volume)
EP05	22192642	P.C. Board (Head)

Symbol No.	Part No.	Description
CAPACITORS D = ±0.5pF, J = ±5%, K = ±10%, M = ±20%, Z = −20+80% ABBREVIATIONS: EL = Electrolytic, TT = Tantalum, PP = Polypropylene		
C001, 002, 003, 004, 005, 006, 007, 008	22308610	PVC
C009	22314102	Chip, 1000pF, 50V, K
C010, 011	22311220	Chip, 22pF, 50V, J
C012	22318150	Chip, 15pF, 50V, J, CH
C013	22312223	Chip, 0.022mfd, 50V, Z
C014	22318240	Chip, 24pF, 50V, J, CH
C015	22311509	Chip, 5pF, 50V, C
C016	22318470	Chip, 47pF, 50V, J, CH
C101	22314102	Chip, 1000pF, 50V, K
C102	22311309	Chip, 3pF, 50V, C
C103	22314102	Chip, 1000pF, 50V, K
C104	22313473	Chip, 0.047mfd, 25V, Z
C105	22318809	Chip, 8pF, 50V, D, CH
C106, 107	22313473	Chip, 0.047mfd, 25V, Z
C108	22314102	Chip, 1000pF, 50V, K
C109	22352104	Chip, 0.1mfd, 25V, Z
C110	22440628	EL, 100mfd, 4V
C111	22440650	EL, 22mfd, 4V
C112	22318271	Chip, 270pF, 50V, J, CH
C113	22318470	Chip, 47pF, 50V, J, CH
C114	22318271	Chip, 270pF, 50V, J, CH
C115	22440628	Chip, 100mfd, 4V
C201	22490033	TT, 1mfd, 10V
C202	22312223	Chip, 0.022mfd, 50V, Z
C203	22313473	Chip, 0.047mfd, 25V, Z
C204	22352104	Chip, 0.1mfd, 25V, Z
C205	22321257	PP, 390pF, 50V, J
C206	22313473	Chip, 0.047mfd, 25V, Z
C207, 208	22315103	Chip, 0.01mfd, 25V, K
C209, 210	22317103	Chip, 0.01mfd, 25V, M
C301, 302	22314102	Chip, 1000pF, 50V, K
C303	22490083	TT, 15mfd, 4V
C304	22440737	EL, 100mfd, 1.5V
C305	22440627	EL, 220mfd, 4V
C306	22440650	EL, 22mfd, 4V
C307, 308	22490181	TT, 1mfd, 25V, M
C309, 310	22440737	EL, 100mfd, 1.5V
C311	22440628	EL, 100mfd, 4V
C312	22311470	Chip, 47pF, 50V, J
C313, 314	22314332	Chip, 3300pF, 50V, J
C315	22314222	Chip, 2200pF, 50V, J

Symbol No.	Part No.	Description
C401, 402, 403, 404	22314681	Chip, 680pF, 50V, K
C405, 406	22440539	EL, 10mfd, 6.3V
C407, 408	22490128	TT, 0.47mfd, 16V
C409, 410	22490033	TT, 1mfd, 10V
C411, 412	22490078	TT, 4.7mfd, 6.3V
C413, 414	22490123	TT, 2.2mfd, 4V
C415, 416	22311151	Chip, 150pF, 50V, J
C417, 418	22490078	TT, 4.7mfd, 6.3V
C419, 420	22314222	Chip, 2200pF, 50V, K
C421, 422	22440539	EL, 10mfd, 6.3V
C423	22440628	EL, 100mfd, 4V
C424	22440738	EL, 220mfd, 1.5V
C425	22440650	EL, 22mfd, 4V
C426	22314222	Chip, 2200pF, 50V, K
C427, 428	22315103	Chip, 0.01mfd, 25V, K
C429	22314102	Chip, 1000pF, 50V, K
C430	22440537	EL, 4.7mfd, 16V
C431	22311101	Chip, 100pF, 50V, J
C433, 434, 435	22317153	Chip, 0.015mfd, 25V, M
C436	22352104	Chip, 0.1mfd, 25V, Z
C437, 438	22315103	Chip, 0.01mfd, 25V, K
C439, 440	22310078	TT, 0.1mfd, 35V
C441, 442	22314681	Chip, 680pF, 50V, K
C443	22317223	Chip, 0.022mfd, 25V, M
C444	22352104	Chip, 0.1mfd, 25V, Z
C445	22311101	Chip, 100pF, 50V, J
C448, 449, 450, 451	22311470	Chip, 47pF, 50V, J
C501, 502	22314682	Chip, 6800pF, 50V, K
C503, 504	22354473	Chip, 0.047mfd, 25V, M
C505, 506	22490182	TT, 0.68mfd, 10V, M
C507, 508	22314472	Chip, 4700pF, 50V, K
C509, 510	22353333	Chip, 0.033mfd, 25V, M
C511	22440738	EL, 220mfd, 1.5V
C512, 513, 514	22490123	TT, 2.2mfd, 4V, M
C517	22440628	EL, 100mfd, 4V
C601, 602	22311221	Chip, 220pF, 50V, J
C603, 604	22310056	TT, 2.2mfd, 4V, M
C605, 606	22311391	Chip, 390pF, 50V, J
C607, 608	22314332	Chip, 3300pF, 50V, K
C609, 610	22317153	Chip, 0.015mfd, 25V, M
C611, 612	22314332	Chip, 3300pF, 50V, K
C613, 614	22317223	Chip, 0.022mfd, 25V, M
C615, 616	22310069	TT, 0.33mfd, 25V, M
C617	22490083	TT, 15pF, 4V

Symbol No.	Part No.	Description
C901	22440534	EL, 1mfd, 50V
C902	22440650	EL, 22mfd, 4V
C903	22490089	TT, 47mfd, 4V
C904	22490132	TT, 0.22mfd, 35V

RESISTORS

All resistors are carbon film 1/6W, ±5% unless otherwise noted. 1K ohm = 1000 ohm, 1M ohm = 1000000 ohm

R001	22521100	10 ohm, Chip
R002	22521680	68 ohm, Chip
R003	22521392	3.9K ohm, Chip
R101	22521331	330 ohm, Chip
R102	22521271	270 ohm, Chip
R103	22521121	120 ohm, Chip
R104	22521222	2.2K ohm, Chip
R105	22521102	1K ohm, Chip
R106	22521822	8.2K ohm, Chip
R107	22521273	27K ohm, Chip
R109, 110	22521224	220K ohm, Chip
R111	22521333	33K ohm, Chip
R112	22521100	10 ohm, Chip
R201	22521123	12K ohm, Chip
R202	22521273	27K ohm, Chip
R203	22521331	330 ohm, Chip
R204, 205	22521223	22K ohm, Chip
R291	22658832	10K ohm, B, Semi-fixed
R301, 302	22521479	4.7 ohm, Chip
R303	22521822	8.2K ohm, Chip
R391, 392	22610011	10K ohm, C, Variable Volume
R401, 402	22521334	330K ohm, Chip
R403, 404, 405, 406	22521682	6.8K ohm, Chip
R407, 408	22521184	180K ohm, Chip, 1/10W, J
R409, 410, 411, 412	22521106	10M ohm, Chip
R413, 414, 415, 416	22521105	1M ohm, Chip
R417, 418	22521122	1.2K ohm, Chip, 1/10W, J
R419, 420	22521822	8.2K ohm, Chip
R421, 422	22521103	10K ohm, Chip
R423	22521105	1M ohm, Chip
R424	22521472	4.7K ohm, Chip

Symbol No.	Part No.	Description
R425	22521103	10K ohm, Chip
R426, 427	22521472	4.7K ohm, Chip
R428	22521223	22K ohm, Chip
R429, 430	22521104	100K ohm, Chip
R431	22521331	330 ohm, Chip
R432	22521560	56 ohm, Chip, 1/10W, J
R434	22521223	22K ohm, Chip
R436	22521104	100K ohm, Chip
R437, 438	22521105	1M ohm, Chip
R439	22521399	3.9 ohm, Chip
R440	22521479	4.7 ohm, Chip, 1/10W, J
R441, 442	22521332	3.3K ohm, Chip
R444	22521104	100K ohm, Chip
R445, 446, 447, 448	22521106	10M ohm, Chip
R449	22521104	100K ohm, Chip
R450	22521472	4.7K ohm, Chip
R451, 452	22521332	3.3K ohm, Chip
R453, 454	22521103	10K ohm, Chip
R455	22521223	22K ohm, Chip
R459	22521223	22K ohm, Chip
R460, 461	22521106	10M ohm, Chip
R491, 492	22658833	2K ohm, B, Semi-fixed
R501, 502	22521434	430K ohm, Chip
R503, 504	22521473	470K ohm, Chip
R505, 506	22521332	3.3K ohm, Chip
R507	22521223	22K ohm, Chip
R508	22521472	4.7K ohm, Chip
R509	22521223	22K ohm, Chip
R601	22521682	6.8K ohm, Chip
R602, 603, 604, 605	22521123	12K ohm, Chip
R606, 607	22521392	3.9K ohm, Chip
R608 ∿ 613	22521222	2.2K ohm, Chip
R614 ∿ 619	22521152	1.5K ohm, Chip
R620 ∿ 625	22521224	220K ohm, Chip
R626, 627	22521222	2.2K ohm, Chip
R628	22521682	6.8K ohm, Chip
R651 ∿ 658	22500460	Composite Parts, 6.8K x 8
R691 ∿ 696	22657352	100K ohm, Variable Volume
R901	22500360	1 ohm, Linear
R902	22521820	82 ohm, Chip
R903	22521562	5.6K ohm, Chip
R904	22115907	350 ohm, Thermistor
R905	22521331	330 ohm, Chip
R991	22658866	6.8K ohm, Semi-fixed

Symbol No.	Part No.	Description
	ACCESSORIES	
AC01	22904591	Owner's Manual (TA)
AC01	22904592	Owner's Manual (VF)
AC01	22904593	Owner's Manual (TC)
AC01	22904594	Owner's Manual (TE)
AC01	22904595	Owner's Manual (AY)
AC02	22152189	Headphone (HR-MV4)
AC03	25835584	Unit Holder
AC04	25883830	Stereo Mic Ass'y
AC05	22991102	Belt
AC06	22957628	Sheet, Caution (TA)

Symbol No.	Part No.	Description